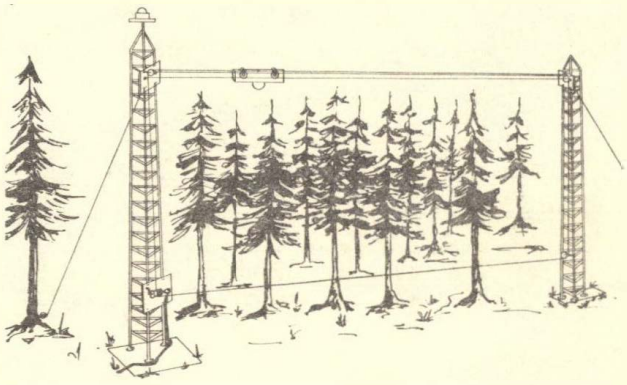
FORESTRY SCIENCE IN THE SERVICE OF MAN

August 1968

WATERSHED MANAGEMENT

TREETOP TRAMWAY



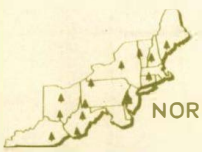
High above the ground -- running along like an ambitious Swiss cablecar -- is a little, meteorological instrument, that may play a big role in helping municipalities predict the water yields of the forested areas surrounding their reservoirs.

Two forestry scientists use the instrument to study the affect of solar radiation on the rate of water loss by trees. Previously they had to measure with their instrument mounted and focused on one spot in the forest from the top of a vertical pole. But the measurements by this method, they found, were hardly representative, since they came from so small an area.

But these scientists were only temporarily stymied. Tapping their good old American ingenuity, they designed a new system. They put their instrument high above the forest canopy on a track -- similar to an overhead cable railway.

Now the small scientific device enjoys frequent runs back and forth on twin cables between two towers by means of a crank-operated drum and pulley. And during each trip it samples the amount of radiation reflecting from the tree canopy over the more extensive area of its travels.

This newly designed system also utilizes everyday items and techniques in its construction. Common TV antennas serve as towers to support



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the ends of the tramway cables. And even the most difficult part of erecting the tramway in the forest -- that of passing guy wires from one tower through the tree crowns to the ground -- is done simply enough by attaching a line to a 6-foot pole and throwing it down through the canopy like a javelin (or, in lieu of strong biceps, by means of a bow and arrow equipped with a fishing reel).

The scientists responsible for developing the ingenius treetop tramway system are Dr. Raymond E. Leonard, Northeastern Forest Experiment Station meteorologist, and Dr. Arthur R. Eschner, Associate Professor of Forest Influences at Syracuse University.

Their recently published paper, U. S. Forest Service Research Paper, NE-92, "A Treetop Tramway System for Meteorological Studies," was a contribution from the Cooperative Watershed Management Research Unit of the Northeastern Forest Experiment Station and the New York State College of Forestry at Syracuse University, Syracuse, N. Y.

FOREST
INSECTS AND DISEASE

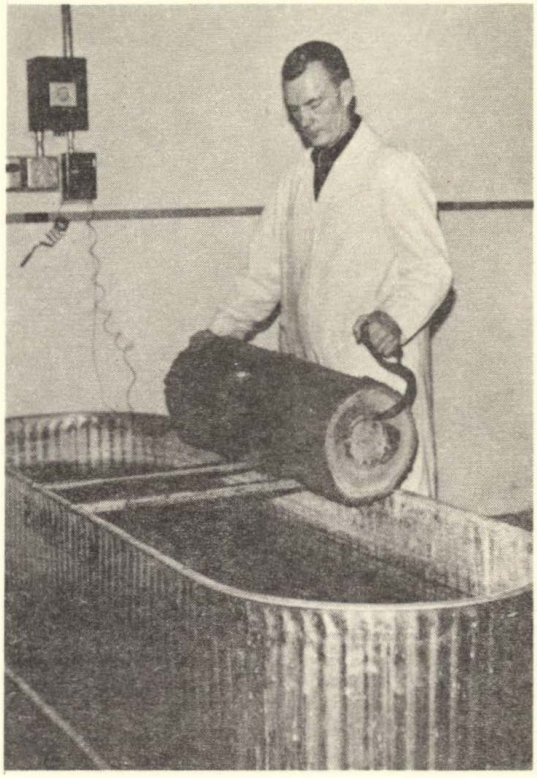
reopening foreign market

Oak wilt has been labeled "potentially the most serious forest tree disease in the United States." A fungus is known to cause the infection, which yearly ruins much valuable oak timber. Northeastern Forest Experiment Station scientists at Delaware, Ohio, are studying the disease.

The problem of oak wilt has become so serious that there are a number of foreign countries prohibiting the importation of logs originating within the known range of the oak wilt disease in the United States. While these logs themselves might be sound and commercially useful, there is always fear that they could contain a trace of the fungus and that this presence could spread to other uninfected areas. Thus, much overseas market for oak timber from the eastern United States has been eliminated with considerable economic loss.

Forestry scientists are currently investigating the biochemistry of the fungus and of the sap from wilted trees. Their research is aimed at protecting living trees from infection and at killing the fungus in timber logs cut from diseased trees. They have discovered several effective and practical methods that will completely eradicate the fungus from contaminated logs without loss of log quality. One method is fumigation with methyl bromide. Others utilize hot water and hot air dip treatments.

Through application of these new, effective, and economical eradication methods, it is hoped that foreign markets can be reopened to United States oak shipments.



FOREST SURVEY

AIDS ECONOMIC DEVELOPMENT

Thanks to up-to-date timber resource information, supplied by the Northeastern Station Forest Survey, a formerly depressed area in Pennsylvania is beginning to hum with a whole wave of new economic activity. Working with data on timber quality, quantity, species, size, and similar basic information, a paper company located a pulpmill in an area formerly plagued with unemployment and underemployment.

Today, 700 employees earn an income in excess of $3,000,000 annually. Next year 1300 employees will bring a $5,000,000 annual income into the area. This new forest industry has created other jobs, too. And land values have also shot up. An acre formerly worth $5 is now selling for from $50 to $100 an acre. This is real progress in rural America--just another example of how forestry research is providing a helping hand to rural development in the nation's Northeast.

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Traditionally, Forest Service people have been active members of the communities and towns in which they live and work. They strive to secure for all, continuous benefits from the Country's forest resources.

TIMBER MANAGEMENT

sweet-toothed squirrels

Indians showed the white man how to make maple syrup. But who showed the Indians?

An old legend of the Menominee, Northeastern Woodland Indians, relates how Indians in attempting to get maple sap accidentally came upon maple syrup. Modern science has shown that it wasn't all that simple. After all, how did the Indians know initially to bore tapping holes into maple trees? And, how did they know that maple sap could produce something delectably sweet?

Animal damage research by a Northeastern Forest Experiment Station scientist in New England recently uncovered evidence that the Indians may have learned how to make and enjoy maple syrup and sugar by watching red squirrels.

There is ample indication of the squirrel's "sweet tooth." Red squirrels in the northern woodlands are often observed biting into the bark of maple trees so that sap flows freely from inside. Sometimes this sap, evaporated by sun and wind as it slowly glides over the bark, forms single drops of maple syrup. Sometimes it forms thin layers of sugar.

Squirrels eagerly lap up the sap, syrup, and sugar.

Credit for the process which produced the syrup enhancing our breakfast pancakes may therefore rightfully go to the "sweet-toothed" squirrel.

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